
FUEL CHEMISTRY NEWS

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Spring

2000



Frank Derbyshire, 1944-1999

Frank Derbyshire, longtime director of the Center for Applied Energy Research and a Professor in the Department of Chemical and Materials Engineering at the University of Kentucky passed away on August 17, 1999, from complications associated with a short illness. He is survived by his wife, Rosemary Derbyshire, three children - Zachary, Eleanor and Suzanna - as well as his mother and stepfather in England.

Professor Derbyshire was an active member of several divisions of the American Chemical Society including Fuel Chemistry. In 1987, he was awarded, by the Fuel Chemistry Division, the Richard A. Glenn Award for best paper. In 1997, he was the recipient of the Henry H. Storch Award in Fuel Chemistry from the American Chemical Society - one of only 31 distinguished recipients of this award. Professor Derbyshire published extensively and authoritatively on various aspects of coal liquefaction and on the production and properties of activated carbons, including 150 scientific papers and 13 patents. He also served on the Advisory Boards of the American Carbon Society and the Pittsburgh Coal Conference. In addition, he was Co-Vice Chairman of the 1992 Gordon Conference on the Science of Hydrocarbon Resources and Chairman of the Steering Committee for the 1994 Conference.

Frank Derbyshire graduated with a 1st class Honors B.Sc. in Chemical Engineering from Manchester University, England followed by a M.Eng. from McMaster University, Ontario and subsequently a Ph.D. from Imperial College, London. His career spanned nearly a thirty year period and concerned primarily research related to the coal and fuel sciences, carbon materials and associated environmental concerns. His experience in coal research commenced in 1975 with the Coal Research Establishment of the National Coal Board at Stoke Orchard, Cheltenham. This was followed by a period

of research with Mobil R&D Corporation, Central Research Division in Princeton, New Jersey. In 1982 he moved to

the Pennsylvania State University as Associate Professor in Fuel Science for the Department of Materials Science and Engineering where he developed his research interests in the use of carbon as a catalyst support. In 1986-87 he spent a year as a Visiting Research Fellow with the Carbon Research Group in the Department of Chemical Engineering at Loughborough University. He later joined Sutcliffe Speakman Carbons Limited as Research Director with responsibility for the analytical and research departments before in 1989 becoming Director of the University of Kentucky Center for Applied Energy Research.

During the past ten years, Professor Derbyshire continually distinguished himself as a truly internationally recognized expert in coal science and carbon materials, and an effective and capable administrator of the coal research program at the University of Kentucky. Under his leadership, the CAER attained world class prominence and recognition in fossil energy utilization. Frank was particularly interested in materials research and had tremendous breadth in this area, which included activated carbons, graphitic carbons, pitches derived from coal and most recently carbon nanotubes. He founded and nurtured to development a strong program on carbon materials in his tenure as Director. Initially the research was in biomass and coal derived carbons, and recently his research focused more on activated carbon fibers. In the last two years he became very interested in research on multiwalled carbon nanotubes and their applications and initiated an extensive research program in this area at the CAER.

Throughout his career, his innovative approach to problem solving led to numerous patents and publications. He was always working to collaborate internationally and gave many students opportunities for research experiences at

the CAER. His experience and innovation was unique and everyone benefited greatly from having known and worked with him. Above all, Frank had an adventuresome spirit, and conducted his work with a positive approach and enthusiasm that, according to his colleagues, made working in the carbon group at the CAER fun as well as professionally rewarding.

Most recently, Professor Derbyshire was instrumental in securing a \$3.5 million grant from the National Science Foundation for a Materials Research Science and Engineering Center (NSF-MRSEC Advanced Carbon Materials Center) at the University of Kentucky. Frank was also set to be the chair of the 25th Biennial Conference on Carbon, which will be held in Lexington, KY in July 2001. He was very excited about bringing the conference to Lexington, and had many ideas on how to make it the best one ever. Everyone at the CAER as well as those throughout the world who have known him personally and/or professionally are deeply saddened by his loss.

In tribute to him, the Fuel Chemistry Division will sponsor a special Symposium in Honor of Frank Derbyshire at the Washington D.C. meeting this summer. The organizers of the symposium are Ljubisa Radovic, Marit Jagtoyen, Semih Eser and Burton Davis. The papers presented at the symposium will try to reflect the many areas of fuel chemistry research Frank was involved in throughout his career. The ACS meeting in San Francisco will also feature a Frank Derbyshire Memorial Symposium sponsored by the Division of Industrial & Engineering Chemistry. Dr. Marit Jagtoyen from the Center for Applied Energy Research is the organizer of this symposium on Activated Carbon Separations. It will be held on Monday, March 27 beginning at 8:30 am in Plaza B, Lobby Level of the Hilton Hotel.

Message from the Chair

Hello! It is my pleasure to address you for the first time as the Chair of the Division. I want to first recognize Katie Carrado for her leadership and dedication to the Division. Katie has been a tremendous asset for the Division. I am sure that during my tenure as Chair that I will continually look to her for input and assistance and, knowing Katie, I am confident that she will remain a valuable resource in her role as Past Chair and beyond.

I also want to recognize the key roles of Phil Britt and Caroline Burgess. Phil has been very dedicated to maintaining a balanced budget for the Division. Having been a treasurer for the Division in the past and looking at the additional efforts that Phil has contributed to the Division, I know that Phil has been devoting quite a bit of his time and energy to the Division. Caroline has been outstanding in her role as Secretary for the Division. The

Division reports have been very high quality and I know that throughout the year, she has been called on to address many matters of importance to the Division.

I want to congratulate Sue Brandes who has been elected Chair Elect for the Division. Sue is a very dedicated professional and I am sure that she will bring that dedication to her role as Chair Elect.

I am very excited about the future of the Division. I believe that Fuel Chemistry will play a significant role in solving many of the environmental, fuel resource, and fuel efficiency issues that affect our future. Our upcoming symposia reflect the importance of the Division of Fuel Chemistry in addressing these issues. The range of important issues that will be addressed by planned symposia include CO₂ Chemistry, Fuel Science, Fischer-Tropsch Chemistry, Clean Air Act Amendments, Inorganics in Fuels, Solid Fuel Chemistry, Bio Fuels, Fuel Cells, Hydrogen, Greenhouse Gases, Air Toxics, Gas Hydrates, Fuel Cycles, Computational Chemistry, and Fine Particulates (PM_{2.5}). Our Division plays a significant role by acting as a focal point for discussion of emerging scientific advances in these (and other) areas.

Administratively, there are some important decisions and issues facing our Division. One of the most important decisions is the future of the preprints. Preprints represent a significant cost for our Division. In addition, there appears to be momentum to consider electronic publication. Our preprints may be our Division's most important product. They are a Divisional, ACS, and an important scientific resource. How we will handle future publication is an extremely important decision. Other issues facing our Division include possible incorporation, membership and the tabling of the potential merger.

I look forward to our future. I believe that our Division has an important role in the Fuel Science debate especially as we become more aware of the impact of Fuel Chemistry in resource availability and allocation, fuel efficiency and type, and on the environment. I look forward to seeing you in San Francisco and I ask you to contact me or any officer in the Division to provide input on the issues I touched on or on anything that might improve our Division.

Anthony Cugini, 2000 Chair

Message from the Past Chair

The joint Fuel Chemistry/Petroleum Chemistry dinner was remarkable. Dr. Art Aldag, the current Chair of PETR, is to be congratulated for planning this successful event. For some of us it was the only opportunity to soak in the ambiance of NAWtins. Jackets and ties were quickly discarded as temperatures soared in the open-air atmosphere. The 100+ attendees thoroughly enjoyed each others company on the cozy balconies of the second floor. As the noises from Bourbon St. escalated throughout the evening, so did our spirits. Art arranged for a sponsored open bar during the entire event, and the restaurant supplied a choice of either a gargantuan 28-oz prime rib, generous filet, blackened chicken, or local seafood. Several ACS and C&E News staffers were spotted, and ACS members and friends of the ACS members of the

Thank you to everyone who helped to make this meeting such a great success. I look forward to seeing you all in San Francisco!

Message from Director of Long-Range Planning

At the New Orleans meeting, Katie Carrado asked me to become director of long-range planning for our Division, a new assignment that I've just started in January. As I see it, there are three major issues that impact the future health and stability of our Division, and quite obviously they are all interlinked: membership recruitment and retention, programming, and finances. I welcome ideas, comments, suggestions, or advice from all members of our Division on these issues, or others that I may have overlooked but that other members recognize as important. As I figure out how to do this job, I will be working closely with members of the executive committee. Volunteers to help are certainly welcome. I can be reached by real mail at C211 Coal Utilization Laboratory, Penn State University, University Park, PA 16802; by e-mail at schobert@ems.psu

Harold Schobert, Director of Long-Range Planning



Colin Snope, Tom Autrey, Kate Corrado, Ben Franz

2000 Henry H. Storch Award

Yuzo Sanada

Professor Yuzo Sanada from Hokkaido University has been awarded the 2000 Fuel Chemistry Division Henry H. Storch Award. The award recognizes distinguished contributions to fundamental or engineering research on the chemistry and utilization of all hydrocarbon fuels, with the exception of petroleum. Over the past forty years, Professor Sanada has brought a broad spectrum of tools to bear in characterizing the chemistry of coal and other fossil fuels, their reaction pathways, and the chemical and morphological natures of the transformation products. Professor Sanada has been a dominant figure in Japanese coal science and one of the most highly regarded international coal chemists with more firsts to his credit than any other practicing coal scientist. He was the first to realize that coals were glassy macromolecular systems, an important insight. He made the first quantitative solvent-swelling measurements on coals, paving the way for an enormous amount of subsequent work. He carried out the first NMR relaxation measurements on coals and was the first to use high temperature and pressure NMR to study coal transformations. He was also among the first to use ESR to study coals and their transformations.

He is principally responsible for the initial productive application of polymer chemistry techniques and concepts to coals. He did this, first using mechanical property measurements that demonstrated the glassy nature of the solid, and then, showed how it could be altered by adding solvents. He made the first quantitative solvent-swelling measurements and first applied the Flory-Rehner equation to coals. These concepts came early (1960's) and illuminated all of his subsequent work. He was the first to show that NMR relaxation could be used to characterize the complex thermal behaviors of coals. He used ESR similarly. These approaches have been further developed by others and constitute a major area of coal chemistry. His work in coking is classical, having studied not only coals but also petroleum heavy oils. His production of carbon microbeads is particularly noteworthy, anticipating in some ways the modern interest in special forms of carbon.

Prof. Sanada received his B. Eng. Degree from Toyama University in 1954 and Ph.D. from Tohoku University in 1964. He worked at the National Research Institute for Pollution and Resources from 1954-1975. He was a professor at Hokkaido University, Coal Research Institute and the Center for Advanced Research of Energy Technology from 1975-1995. Presently, he is an Emeritus Professor at Hokkaido University and Senior Director

of Scientific Research, Petroleum Energy Center in Tokyo, and Visiting Research Fellow at King Fahd University of Petroleum and Minerals in Saudi Arabia.

Professor Sanada has published 286 research papers and 20 books. He has been active in a number of societies and advisory panels in fuel chemistry. During his long career, he has published numerous papers on all of the following topics and made significant contributions in each of these areas coal carbonization, mesophase formation and structure, macromolecular coal structure, NMR and ESR applied to coals, and direct coal liquefaction.

The impact of Professor Sanada's work on the field over the last several decades has been truly extraordinary. His original view of coal as having a three-dimensional network structure has had a far reaching impact on our present understanding of this complex material, and this concept is still at the forefront of coal research today. His use of advanced spectroscopic techniques, as a means to unravel coal structure, was pioneering for its time.

The award will be presented at the Spring ACS Meeting in San Francisco, along with a special symposium honoring Professor Sanada.

R.A. Glenn Award

In 1956, the ACS Fuel Chemistry Division, in cooperation with Bituminous Coal Research, Inc., established an award to recognize the best paper in Fuel Chemistry presented at an ACS meeting. In 1972, the award was named in honor of Richard A. Glenn, who served as Assistant Director of Research at Bituminous Coal Research, Inc. and as Chairman of the Fuel Chemistry Division in 1960. All papers presented at Fuel Chemistry Division symposia are eligible for this award. Session chairs review the papers in their sessions and select one paper for every ten submitted they feel are most innovative and interesting. A selection committee then carefully reads all these papers and attends their presentations at the meeting. Based on the oral presentation, technical subject matter, and the quality of the preprint, the committee selects the paper to receive the R. A. Glenn Award.

Excellent symposia and papers were presented at our last meeting in New Orleans. The Glenn Award Committee

selected the paper "Isolation of Chlamydomonas Mutants with Improved Oxygen-Tolerance" authored by Timothy Flynn, Maria L. Ghirardi and Michael Seibert from the National Renewable Energy Laboratory in Golden, CO to receive the Glenn Award for Best Paper presented by the Fuel Chemistry Division in New Orleans. The Committee extends their warm appreciation and congratulations to the authors for their contribution to the quality of the Fuel Chemistry Division technical program. The Award plaques and a \$500 check will be presented to the authors at the Joint Fuel/Petroleum Division Dinner at the San Francisco ACS Meeting on Tuesday evening, March 28, 2000. In addition, each author will be provided with a free ticket to this dinner.

SAN FRANCISCO, MARCH 26-30, 2000

San Francisco Program At-A-Glance

The Fuel Chemistry Program at the 219th Annual ACS Meeting in San Francisco, in March 2000, features 86 papers spread across six symposia, including the Storch Award Symposium, and a special Year 2000 celebration symposium entitled Fuel Science in the Year 2000 -- "Where do we stand, where do we go from here?". An additional 80 papers have been co-sponsored by the FUEL Division in four symposia sponsored by other Divisions and Secretariats. All Fuel Chemistry sponsored sessions will be held in the Argonaut Hotel in San Francisco. These are listed below.

Sunday, March 26

- *Particulate Matter and Stationary Sources (am, pm)*
- *Chemistry and Molecular Modeling of Solid Fuel Reactions (am, pm)*

Monday, March 27

- *Fuel Science in the Year 2000 (am, pm)*
- *Particulate Matter and Stationary Sources (pm)*
- *Sci-Mix Poster Session (eve)*



Tuesday, March 28

- *Henry H. Storch Award Symposium (am)*
- *Fuel Division Business Meeting (pm)*

- *Fuel Science in the Year 2000 (pm)*
- *Joint FUEL/PETR Divisional Dinner (eve)*

Wednesday, March 29

- *Fuel Science in the Year 2000 (am, pm)*

- *Chemistry of Liquid and Gaseous Fuels (am)*
- *Application of X-ray and Neutron Methods to Complex Systems (pm)*

Thursday, March 30

- *Application of X-ray and Neutron Methods to Complex Systems (am, pm)*

Fuel Division members are especially invited to attend the Henry H. Storch Award Symposium, to be held on Tuesday morning, March 28th, which will honor the many contributions made by Prof. Yuzo Sanada, Hokkaido University, Japan, to Fuel Science. In addition to the Storch Award Address to be given by Prof. Sanada, other speakers will be Drs. Robert Botto, J.G. Speight, Colin Snape and John Larsen. The Division Business meeting will follow immediately after the conclusion of the symposium.

An impressive list of speakers has also been assembled for the Special 21st Century Celebration symposium, Fuel Science in the Year 2000 -- "Where Do We Stand, Where Do We Go from Here?". This symposium, organized by Jerry Huffman (U. Kentucky) and Irving Wender (U. Pittsburgh), will feature 23 invited presentations, each 40 mins long, that will discuss current and future research directions needed to meet the energy and environmental requirements of the 21st Century. A not-to-be-missed, once-in-a-millennium opportunity!

Twenty presentations will be presented at the symposium entitled Application of X-ray and Neutron Methods to Complex Systems in Energy & Fuels Science, organized by Katie Carrado (Argonne NL) and Katsu Sugawara (Akita U., Japan). This symposium will give the attendee the opportunity to learn the latest in X-ray and neutron scattering, diffraction, and spectroscopic techniques applied to fossil fuels, catalysts, and related materials.

Thomas Feeley and William Aljoe, (U.S. National Energy Technical Laboratory, Pittsburgh) have developed a symposium entitled Particulate Matter and Stationary Sources, which is a brand new topic for Fuel Chemistry Division symposia. Some 18 papers will discuss the characterization, generation, dispersion and environmental ramifications of fine particulate matter arising from combustion of fossil fuels for energy production.

Two other symposia, Chemistry and Molecular Modeling of Solid Fuel Reactions, organized by Ljubisa Radovic

(Penn State U.) and Takashi Kyotani (Tohoku U., Japan), and Chemistry of Liquid and Gaseous Fuels, organized by Frank Huggins (U. Kentucky), round out the agenda. The former is highlighted by a number of papers modeling solid-fuel chemical reactions, while the latter presents the latest research on combustion of liquid fuels and the development of jet-grade fuels.



Five papers have been nominated for the Division's Glenn Award, which is given at every ACS Meeting to the best paper presented in FUEL symposia. In addition to the oral presentations, all five papers will be given as poster presentations at the Sci-Mix poster session, 8-10 pm, Monday March 27th. At the Society-wide Sci-Mix session, you will be able to discuss the authors' papers, explore other Divisions' posters, or merely enjoy the atmosphere of this social occasion.

A further 80 papers have been co-sponsored by the FUEL Division in the following four symposia: Advances in Fischer-Tropsch Chemistry (PETR), Recalcitrant Compounds in Gasoline (ENVR), Catalysis for the Future (CATL) and Combinatorial Materials Development (MTLS). Please check the Final Program in the February 28 issue of Chemical & Engineering News for details on when and where these symposia are to be held in San Francisco.

Last but not least, why not kick back for one evening at least and enjoy renewing old acquaintances and making new ones at the Division Dinner? The joint FUEL/PETR Banquet will be held at Gabbiano's Restaurant and Oyster Cafe, One Ferry Plaza, San Francisco on Tuesday, March 28th. The affair will commence with a social hour from 6 to 7 pm, to be followed by the Dinner at 7 pm. The cost of the Dinner with wine is \$40. Please note that due to an oversight, the ACS has not included information about the Joint FUEL/PETR Division Banquet in the Pre-Registration information, etc., for the San Francisco Meeting. Tickets will therefore only be available at the meeting from the Fuel Division desk. A visit to the desk will also give attendees the opportunity to obtain information about membership, future meetings and symposia, preprints and other divisional activities.

Symposia at Future Meetings

The symposia and session chairs for future National Meetings are listed on the second to last page of this newsletter. There is still room for several more good symposiums at our future meetings. Do you know of a good topic for a Fuel Chemistry symposium? Would you like to be a Symposium Chair? Do you know someone else who might be a good candidate? Please help identify these individuals to use their talent for the further advancement of the Division. Please contact one of the Executive Committee members if you or anyone you know would be interested in organizing a symposium.

WASHINGTON, D.C., August 20-25, 2000

Program Chair: Frank Huggins, 533 South Limestone Street, Suite 111, University of Kentucky, Lexington, KY 40506, 606-257-4045, fax 606-257-7215, fhuggins@engr.uky.edu.

Deadline for submission of Abstracts: Electronic abstract submission or four hard copies of 150 word abstract (original on ACS Abstract Form) due to symposium chair by April 15, 2000. Deadline for submission of Preprint Papers: May 15, 2000.

1990 Clean Air Act Amendments - A Ten-Year Assessment. Joseph J. Helble, University of Connecticut, Department of Chemical Engineering, U-3222; Storrs,

CT 06269-3222. 860- 486-4019; fax 860-486-2959; helble@engr.uconn.edu

Inorganics in Fossil Fuels, Waste Materials, and Biomass-Characterization, Combustion Behavior, and Environmental Issues. Constance L. Senior, Physical Sciences, Inc., 20 New England Business Center, Andover, MA 01810, 978-689-0003; fax 978-689-3232; senior@psicorp.com; Esko Kauppinen, VTT Chemical Technology, P.O. Box 1401, Espoo, FIN-02044, Finland, +358 0 456 6165, fax +358 0 456 7021, esko.kauppinen@vtt.fi.

Waste Material Recycling for Energy and Other Applications. Sarma V. Pisupati, Energy and Geo-Environmental Engineering Department, The Pennsylvania State University, 124 Hosler Building, University Park, PA 16802. 814-865-0874; fax 814-863-8892; sxp17@psu.edu; Marek A. Wojtowicz, Advanced Fuel Research, Inc., 87 Church Street, East Hartford, CT 06108, 860-528-9806 ext. 142; fax 860-528-0648, marek@AFRinc.com.

CO₂ Capture, Utilization, and Sequestration. R. Warzinski, U.S. Department of Energy, Federal Energy Technology Center, P.O. Box 10940, Bldg 83-324, Pittsburgh, PA 15236, 412-892-5863; fax 412-386-4806, warzinski@fetec.doe.gov; Robert M. Enick, University of Pittsburgh, Department of Chemical Engineering, 323 Benedum Engineering Hall, Pittsburgh, PA 15261, 412-624-9649, enick@engr.pitt.edu.

Production of Fuels and Chemicals from Synthesis Gas. D.B. Dadyburjor, Department of Chemical Engineering, P.O. Box 6102, West Virginia University, Morgantown WV 26506-6102. 304-293-2111 x 2411; fax 304-293-4139; dadyburjor@cemr.wvu.edu, E.L. Kugler, Department of Chemical Engineering, 431 Engineering Sciences Building, Morgantown, WV 26506, 304-293-2111 x 2414; fax 304-293-4139; kugler@cemr.wvu.edu.

Symposium in Honor of Frank Derbyshire. Ljubisa R. Radovic, The Pennsylvania State University, Energy and Geo-Environmental Engineering, 205 Hosler Building, University Park, PA 16802, 814-865-3248, fax 814- 865-3075, lrr3@psu.edu; Marit Jagtoyen, Center for Applied Energy Research, University of Kentucky, 2540 Research Park Drive, Lexington, KY 40511, 606-257-0213, fax 606-257-0302, jagtoyen@caer.uky.edu; Semih Eser, The Pennsylvania State University, Energy and Geo-Environmental Engineering, 154 Hosler Building, University Park, PA 16802, 814-863-1392, fax 814-865-3075, seser@psu.edu; Burton Davis, University of Kentucky, Center for Applied Energy Research, 2540 Research Park Drive,

Lexington, KY 40511, 606-257-0251, fax 606-257-0302, davis@caer.uky.edu.

Solid Fuel Chemistry. Contact: Frank Huggins.

Chemistry of Liquid and Gaseous Fuels. Contact: Frank Huggins.

Emission Control in Petroleum Processing (PETR/FUEL).

General Papers. Frank Huggins.

SAN DIEGO, April 1-5, 2001

Program Chair: Sarma V. Pisupati, Energy and Geo-Environmental Engineering, The Pennsylvania State University, 124 Hosler Building, University Park PA 16802, 814-865-0874, fax 814-865-3248, sxp17@psu.edu.

Reaction Mechanisms in Fuel Processing. Phillip F. Britt, Chemistry Division, Oak Ridge National Laboratory, P.O. Box 2008, MS-6197, Oak Ridge, TN, 37831, 423-574-5029, fax 423-576-5235, brittpf@ornl.gov; A.C. Buchanan, Chemistry Division, Oak Ridge National Laboratory, P.O. Box 2008, MS6197, Oak Ridge, TN 37831, 865-576-2168, 865-574-4902, buchananac@ornl.gov.

Coal Bed Methane. Promod C. Thakur, Consol Inc., R&D, 1027 Little Indian Creek Rd., Morgantown, WV 26501, 304-983-3207, fax 304-983-3209, Promodthakur@consolcoal.com; Kashy Aminian, West Virginia University, 345 F Comer, P.O. Box 6070, Morgantown, WV 26506, 304-293-7682, kaminian@wvu.edu.

Nitrogen Chemistry in Coal Utilization. Marek A. Wójtowicz, Advanced Fuel Research, Inc., 87 Church Street, East Hartford, CT 06108, 860-528-9806 ext. 142, fax 860-528-0648, marek@AFRinc.com.

Fuels of the Future - Heavy Oil and Hydrogen for Fuel Cells. Rashid Khan, Texaco Upstream Technology, 3901 Briar Park, Houston, TX 77042, 713-954-6238, fax 713-954-6113, khanmr@texaco.com; Steve Amendola, Millenium Cell, 1 Industrial Way West, Eatontown, NJ 07724, 732-542-4000 ext. 207, fax 732-542-4010, amendola @milleniumcell.com.

Argonne National Lab Premium Coal Sample Data Base.

Ken B. Anderson, Argonne National Laboratory, Chemistry Division, Bldg 200, Argonne, IL 60439, 630-252-1928, fax 630-252-9288, kbanderson@anl.gov.

Carbon Products for Environmental Applications.

Tony Lizzio, Illinois State Geological Survey, 615 East Peabody Drive, Champaign, IL 61820, 217-244-4985, fax 217-333-8566, lizzio@geoserv.isgs.uiuc.edu.

Environmental Challenges for Fossil Fuel Combustion.

Maria Mercedes Maroto-Valer, The Energy Institute, The Pennsylvania State University, 405 Academic Activities Building, University Park, PA 16802, 814-863-8265, fax 814-863-8892, mmm23@psu.edu.

Solid Fuel Chemistry. Sarma Pisupati.**General Papers.** Sarma V. Pisupati.**CHICAGO, August 26-31, 2001**

Program Chair: Sarma V. Pisupati, 124 Hosler Building, Penn State University, University Park PA 16802, 814-865-0874, fax 814-865-3248, sxp17@psu.edu.

Recent Advances in Fuel Cells. Marek A. Wojtowicz, Advanced Fuel Research, Inc., 87 Church Street, East Hartford, CT 06108, 860-528-9806 ext.142, fax 860-528-0648, marek@AFRinc.com.

Cofiring or Co-Processing Coal And Biomass. James T. Cobb, Jr., Chemical Engineering Department, University of Pittsburgh, 1137 Benedum Hall, Pittsburgh, PA 15261, 412-624-7443, fax 412-624-9639, cobb@engrng.pitt.edu.

Catalysis in Fuel Processing for Fuel Cell Application (Joint with Petroleum Division). Sai P. Katikaneni, Advanced Technology Group, Energy Research Corporation, 3 Great Pasture Road, Danbury, CT 06813, 203-825-6067, fax 203-825-6150, ELAB!SKATIKAN@erc.attmail.com; A.M. Gaffney, DuPont Central R&D, Experimental Station, P.O. Box 80262, Wilmington, DE 19880-0262, 302-695-1800, fax 302-695-8347, anne.m.gaffney@usa.dupont.com; Chunshan Song, Energy & Geo-Environmental Engineering Department, The Pennsylvania

State University, 206 Hosler Bldg., University Park, PA 16802-5000, 814-863-4466, fax 814-865-3248, csong@psu.edu.

Value Added Carbon Products from Fossil Fuels.

Frank Rusinko, The Energy Institute, The Pennsylvania State University, 407 Academic Activities Building, University Park, PA 16802, 814-863-8085, 814-865-8892, fjr4@psu.edu; John W. Zondlo, College of Engineering and Mineral Resources, Department of Chemical Engineering, P.O. Box 6102, Morgantown, WV 26506; Brad Tomer, U.S. Department of Energy, Federal Energy Technology Center, 3610 Collins Ferry Road, P.O. Box 88, Morgantown, WV 26507.

Mercury Emissions from Coal. Karen Katrinak, Microbeam Technologies Inc., 1521 24th Avenue South, Suite B-2, Grand Forks, ND 58201, 701-772-4482, fax 701-772-4099, katrinak@badlands.nodak.edu; Kevin Galbreath, Energy & Environmental Research Center, University of North Dakota, P.O. Box 9018, Grand Forks, ND 58202-9018, 701-777-5127, fax 701-777-5181, kgalbreath@eerc.und.nodak.edu.

Computer Modeling in Fuel Chemistry. Jonathan P. Mathews, Energy and Geo-Environmental Engineering Department, The Pennsylvania State University, 151 Hosler Building, University Park, PA 16802, 814-863-6213, fax 814-865-3248, jpm10@psu.edu; Michael T. Klein, Rutgers, The State University of New Jersey, School of Engineering, Office of the Dean, B 204, 98 Bret Road, Piscataway, NJ 08854, 732-445-4453, fax 732-445-7067, mtklein@jove.rutgers.edu.

Fine Particulate (PM_{2.5}) Formation and Emissions from Fuel Combustion.

Curt M. White, Federal Energy Technology Center, Mail Stop 94-212, P.O. Box 10940, Pittsburgh, PA 15236, Pittsburgh, 412-892-5808, fax 412-892-4158, cwhite@fetc.doe.gov; André L. Boehman, 114 Hosler Building, The Pennsylvania State University, University Park, PA 16802, 814-865-7839, fax 814-865-3248, alb11@psu.edu.

General Papers. Sarma V. Pisupati.**ORLANDO, April 7-11, 2002**

Program Chair: Robert P. Warzinski, U.S. Department of Energy, Federal Energy Technology Center, P.O. Box 10940, Pittsburgh, PA 15236, 412-892-5863, fax 412-892-4152, warzinsk@fetc.doe.gov.

Trends in Carbon Products
Production and Utilization of Renewable Fuels
CO₂ Capture and Sequestration
Utilization of Greenhouse Gases
Hydrogen Production and Utilization
General Papers

BOSTON, September 8-12, 2002

Program Chair: Robert P. Warzinski, U.S. Department of Energy,
Federal Energy Technology Center, P.O. Box 10940, Pittsburgh,
PA 15236; 412-892-5863, fax 412-892-4152,
warzinsk@fetc.doe.gov.

Monitoring and Control of Air Toxics
Separation and Utilization of Coal Combustion By-Products
Novel Fuel Cycles/System Integration
Computational Chemistry for Fuel Science
Gas Hydrates
General Papers

NEW ORLEANS, March 23-27, 2003

Program Chair: Chunshan Song, Energy & Geo-Environmental
Engineering Department, The Pennsylvania State University,
206 Hosler Bldg., University Park, PA 16802-5000, 814-863-
4466, fax 814-865-3248, csong@psu.edu

Storch Award Symposium
Reaction Pathways and Structure-Property
Relationships in Fuel Chemistry
Clean Fuels by Indirect Coal Liquefaction: 30 Years
Progress Since First Oil Crisis
Synthetic Fuels by Direct Coal Conversion: 30
Years Progress Since First Oil Crisis
Catalysis and Reaction Chemistry in Fuel
Processing for New Transportation Vehicles
Centennial of Electric Power Generation and
Progress in Fuel Processing
Chemicals and Materials from Coal and Heavy
Hydrocarbon Sources
General Papers

NEW YORK, September 7-11, 2003

Program Chair: Chunshan Song, Energy & Geo-
Environmental Engineering Department, The Pennsylvania

State University, 206 Hosler Bldg., University Park,
PA 16802-5000, 814-863-4466, fax 814-865-
3248, csong@psu.edu

Hydrogen Production and Separation
Centennial of Aviation Fuels and Advance in
Aviation Fuel Chemistry
Supply and Demand of Energy, Fuels and
Chemical Feedstock in the 21st Century
Conversion and Coprocessing of Heavy
Hydrocarbon Resources and Waste Materials
Catalysis and Process for Conversion of Natural
Gas and Coalbed Methane
Environmental Issues in Fossil Fuel Conversion
and Utilization
General Papers

Other Conferences and Symposia of Interest

Two conferences sponsored by FETC will be held back-to-
back at the Radisson Hotel Greentree, Pittsburgh, PA.
For more information please contact Karen Lockhart
at 412-892-4763, fax 412-386-6486,
lockhart@fetc.doe.gov.

Conference on Unburned Carbon on Utility Fly Ash
May 16, 2000

**Conference on Selective Catalytic and Non-Catalytic
Reduction for NO_x Control**, May 17-18, 2000.

**Part of the 2000 Symposium on Fundamental Studies on
Catalysis and Reaction Engineering** to be held at the
149th IUPAC Congress, September 1-11, 2000, in
Osaka, Japan. The symposium is organized by the
IUPAC Commission on Catalysis and Reaction
Engineering, and is co-sponsored by the
Ministry of Education, Culture, Sports, Science and
Technology, Japan.

**Future of Illinois Basin Coal and Other Geologic
Resources: Impact of Deregulation, Clean Air Act
and Kyoto Protocol.** The Illinois Basin Consortium (IBC),
consisting of the State Geological Surveys in Illinois, Indiana
and Kentucky, is organizing a conference in October,
2000 in Indianapolis, IN, with a focus on the expected
impact on coal, water and other resources in the three
states, resulting from the deregulation of electric power
industry, the continued effects of the 1990 Clean Air Act
Amendments and the anticipated effects of the Kyoto
climate change protocol. The purpose of the conference

is to highlight the different impacts in the three states compared with the national and international impacts, and to discuss strategies needed to minimize the negative effects on the utilization of natural resources of the three states. Details of the conference format will be announced in the next two months. Contact Subhash Bhagwat for information, bhagwat@isgs.uiuc.edu.

2nd Pacific Basin Conference on Adsorption Science and Technology, May 14-18, 2000, Brisbane Australia, <http://www.uq.edu.au/apc/>.

3rd Asia Pacific Conference and Exhibition on Sustainable Energy and Environmental Technology will be held on May 28-31, 2000 in Hong Kong, China. The conference is organized by the Hong Kong University of Science and Technology. For more information please contact: Professor Po Lock Yue, Department of Chemical Engineering, Hong Kong University of Science and Technology, keplyue@usthk.ust.hk, <http://www.ust.hk/~webceng>.

Fuel Division Liaisons

Colin Snape of the University of Strathclyde, Department of Pure & Applied Chemistry, Glasgow G1 1XL, Scotland, UK has been serving the Division as European Liaison for two years. The original goal was to have membership matters, such as dues collection, recruiting of members, answering questions and distribution of Preprints, proceed through him. Even though our intentions were good, the latter results were not reasonable because of delays and losses of Preprints during shipping. Therefore, we have decided to have many of the membership aspects handled by Colin, but the Newsletters, Preprints and Division correspondence are being sent directly to the European members of the Division. Of course, members are also free to correspond directly with the Division Treasurer and Membership Chair. Considering the above need for direct mailing and associated costs, the European fees that are handled by Colin are set at L20. In addition, the European members of the Division will have recognized ACS affiliate status. A similar arrangement is being set up with Peter Nelson of CSIRO to serve as Australian Liaison. The fee structure and procedures will be established before or during the Spring San Francisco National Meeting. Comments can be directed to me (dccronauer@anl.gov) or Peter (Peter.Nelson@dcet.csiro.au).

Don Cronauer

Welcome New Fuel Chemistry Division Members

At the New Orleans meeting, 37 new members joined the Fuel Chemistry Division. We wish them a warm welcome. The current membership is now 982.

Narayanan Ramprasad, Murray Hill, NJ
Ronald T. Kelley, Fort Lauderdale, FL
Oliver Mullins, Schlumberger, CT
Russell C. Maxwell, US DOE, PA
John Kopasz, Argonne National Laboratory
Jin Ki Hong, Los Alamos National Laboratory
Brendan Murray, Houston, TX
Dayton T. Miller, Stone Mountain, GA
Bhaskar Balasubramanian, Energy Partners
Stephen Wynden, New York, NY
Jie Chang, University of Tokyo
Robert A. J. Dams, Portsmouth, United Kingdom
David Belyung, West Milford, NJ
Antony M. Stanislaus, Kuwait Institute
Francisco Lopez-Linares, Los Teques, Venezuela
Mark A. Plummer, Littleton, CO
Robert J. Remick, Bolingbrook, IL
Stella Papasavva, General Motors
Paul F. Schubert, Bartlesville, OK
Mazen A. Shalabi, Dhahran, Saudi Arabia
Hyung-Taek Kim, Suwon, South Korea
Christopher Gordon, Oklahoma City, OK
Masato Yamazaki, Tohoku University, Japan
Yasuharu Yokoi, Tokyo Gas Company, Japan
Taku Aida, Tohoku University, Japan
Hideyuki Takagi, Fukaoka City, Japan
John R. Shapley, University of Illinois, IL
Carl Hoff, University of Miami, FL
Stephen Bryan DuBose, Hattiesburg, MS
Michael W. Potter, Sugarland, TX
Hiroyuki Kawashima, Tsukuba, Japan
Stephane Kressmann, Institut Francais du Petrole
Virginie Harle, Institut Francais du Petrole
Hiroyuki Seki, Shimoshinjo, Japan
Donald G. Truhlar, Minneapolis, MN
Yuming Xie, Corning, NY
Hiroyuki Seki, Shimoshinjo, Japan
Socrates Acevedo

Member Benefits

The Division of Fuel Chemistry provides a forum for presentation and discussion of fuels-related chemistry research and development. The Division is also concerned with public policy issues related to energy and fuels, such

as the environmental impacts of fuel use and the evaluation of options for resource utilization (e.g., fuel, chemical or material). Division programming has remained strong in the traditionally important areas of the utilization of coal, natural gas, and alternative fuels and feedstocks. Programming is being increased in areas associated with the environmental effects of fossil fuel use, energy and fuel production from biomass and waste, bioprocessing of fuels, recent developments in fuel cells and batteries, and the production of high-value materials and chemicals from fuels. Member benefits include: programming at national and regional meetings, co-sponsorship of symposiums with other Divisions, e.g., Petroleum and Environmental Chemistry Divisions; Fuel Chem News (sent prior to each national meeting); preprints of all technical papers mailed prior to each National Meeting (four issues per year); Energy & Fuels; home page on World Wide Web <http://www.anl.gov/PCS/acsfuel/>; Henry H. Storch Award for distinguished contributions to fuel science or engineering, R.A. Glenn Award for the best paper at a National meeting, Distinguished Service Award for sustained and distinguished contributions to the field of fuel chemistry; and discounts on ACS symposium series publications and student subscriptions to Energy & Fuels.

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Dr. Jonathan Mathews is our new Director of Advertising. To place an ad here, please contact Jonathan at 814-863-6213 fax 814-865-3248, or jpm10@psu.edu. Advertisements can be placed in this newsletter as well as the preprints at very reasonable rates. Either forum is a cost effective way to reach the national and international community of fuel scientists. Advanced Fuel Research, Inc. and their spin-off company, On-Line Technologies, Inc., report a good response from advertisements in the preprints and expect similar results from the newsletter. Please consider this as one of your options if you have goods or services that are of interest to the fuels research community.

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